

REMARKS

Upon entry of the amendments in this paper, claims 1-4, 6-11, 14, 15, and 17-21 will be pending in the above-identified application. Claim 1 is herein amended. No new matter is entered.

This paper is filed in response to the Office communication mailed on May 21, 2010. Applicant requests favorable reconsideration of pending claims 1-4, 6-11, 14, 15, and 17-21.

Claim Rejections

Claims 1, 2, 6, 8-10, and 21 stand rejected under 35 U.S.C. §103(a) as being unpatentable over ATTAR et al. (US 2004/0179469) (hereinafter, "AATAR") in view of IINUMA (US 7,075,909).

Applicant disagrees with the Examiner's characterization of the previously presented claims and cited references. However, to expedite prosecution, Applicant herein amends claim 1 to clarify the subject matter of the claimed invention. In view of these amendments and the following remarks, Applicant requests favorable reconsideration of pending claims 1-4, 6-11, 14, 15, and 17-21.

Regarding claim 1, the Examiner takes the position that ATTAR discloses a time slot assignment section (paragraph 18, time division multiplexing is employed), but acknowledges that ATTAR does not disclose a set of communication stations including a plurality of said communicating stations. The Examiner asserts that INUMA discloses this missing feature (Abstract; col. 2, lines 30-48; col. 16, lines 38-41, a set of mobile stations assigned each time

slot) and that it would have been obvious to modify ATTAR to use the technique of assigning more than one user to a time slot in order to increase efficiency of frequency use.

Applicant respectfully disagrees with the Examiner's characterization of the cited references and the pending claim language.

Claim 1 recites, in part:

a time slot assignment section which divides a communication cycle as a basic cycle of time division into time slots, and assigns a set of communication stations and a type of a communication section to each of the time slots, the set of communication stations includin^g a plurality of said communication stations ...

and

when the time-synchronous communication section transmits a time- synchronous communication frame to each communication station in the set of communication stations, time of the timer section of each communication station and the time slots of all stations in the set of communication stations are synchronized.

Applicant submits that ATTAR does not disclose a time slot assignment section that *assigns a set of communication stations and a type of a communication section to each of the time slots*. See claim 1. Instead, ATTAR discloses: "At each time-slot, data transmission occurs from an access point to **one and only** one access terminal... ." See paragraph [0020], emphasis added. Applicant submits that this clearly teaches away from the claimed invention.

Applicant submits that paragraph [0018] fails to cure this deficiency. The TDMA technique disclosed in ATTAR merely teaches assigning multiple time slots to multiple communication stations Whereas, claim 1 requires that a set of communication stations

(including a plurality of said communication stations) and a type of a communication section are assigned to each of the time slots. Accordingly, the TDMA technique disclosed in ATTAR fails to disclose this claimed feature. Likewise, INUMA fails to teach or suggest this claimed feature. Accordingly, even if one were to combine the references in the manner suggested by the Examiner, the result would not be the claimed invention.

Furthermore (assuming *arguendo* that one were to combine the cited references), the result would not be the claimed invention because none of the cited references, alone or in combination, discloses “when the time-synchronous communication section transmits a time-synchronous communication frame to each communication station in the set of communication stations, time of the timer section of each communication station and the time slots of all stations in the set of communication stations are synchronized.” *See* claim 1. The Examiner relies on ATTAR to disclose this feature; however, paragraph [0135] of the ATTAR reference, for example, only discloses that the timing of the access points and access terminals is synchronized (*e.g.*, the communication station is synchronized.) Whereas, claim 1 recites that the time-synchronous communication frame is transmitted to each communication station, and the time slots of all communication stations are synchronized. ATTAR fails to teach or suggest this feature. Likewise, INUMA fails to teach or suggest this feature.

For at least the aforementioned reasons, Applicant respectfully submits that ATTAR and INUMA do not teach or suggest all of the limitations recited in claim 1.

Furthermore, Applicant submits that ATTAR and INUMA fail to disclose assigning the set of communication stations and the type of the communication section including the time-

synchronous communication, the non-cycle data communication and the cycle data communication to each of the time slots, as required by claim 1.

Also, ATTAR and INUMA fail to disclose performing communication within the period of the time slot in accordance with these assignments assigned by the time slot assigned section, as required by claim 1.

In a conventional communication control system for controlling communications in an industrial application, for example, scanning transmission is performed for real-time action. However, in the conventional system, there is a problem in that the scanning transmission has no scalability, for example, because data communication is performed for each storage portion of storage area. Meanwhile, in an industrial application, both the non-cycle data communication for abnormal notice and the cycle data communication for control are required. By enabling the non-cycle and cycle data communications to have scalability and various sets of communication station, these communications can achieve various types of communications. However, there is a problem in the real-time action in performing various types of communications through the scanning transmission.

Whereas, according to the present invention, as described above, for example, the set of communication stations and the type of the communication section including the time-synchronous communication, the non-cycle data communication and the cycle data communication are assigned to each of the time slots, and communication is performed within the period of the time slot in accordance with these assignments assigned by the time slot assignment section. Therefore, the time-synchronous communication, the non-cycle data

communication and the cycle data communication are separated from each other in terms of time, which has an advantage in that both the real-time action and the scalability can be realized.

In view of the aforementioned amendments and remarks, Applicant requests that the obviousness rejection of claim 1 be withdrawn.

Also, because claims 2, 6, 8-10, and 21 depend from claim 1, Applicant requests that the obviousness rejection of these claims be withdrawn.

Claims 3 and 4 stand rejected under 35 U.S.C. §103(a) as being unpatentable over ATTAR et al. and IINUMA as applied to claim 1 above further in view of WU et al. (US 2003/0110435).

Claims 7, 11, 14, and 15 stand rejected under 35 U.S.C. §103(a) as being unpatentable over ATTAR et al. and IINUMA as applied in claim 1 above in view of HAARSTEN (USPN 6,021,124) further in view of HADZIC et al. (US 20040062278).

Claims 17-20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over ATTAR et al. and IINUMA as applied to claim 1 above in view of YONG et al. (USPN 5,541,919).

Claims 3, 4, 7, 11, 14, 15, and 17-20 depend from claim 1. Applicant requests that the obviousness rejection of these claims be withdrawn for at least the reasons discussed above.

Conclusion

In view of the aforementioned amendments and accompanying remarks, Applicant submits that the claims, as herein amended, are in condition for allowance. Applicant requests such action at an early date.

If the Examiner believes that this application is not now in condition for allowance, the Examiner is requested to contact Applicant's undersigned attorney to arrange for an interview to expedite the disposition of this case.

If this paper is not timely filed, Applicant respectfully petitions for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP

/DARRIN A. AUITO/

Darrin A. Auito
Attorney for Applicant
Registration No. 56,024
Telephone: (202) 822-1100
Facsimile: (202) 822-1111

DAA/rer